THYRISTOR MODULE

PBH308AC

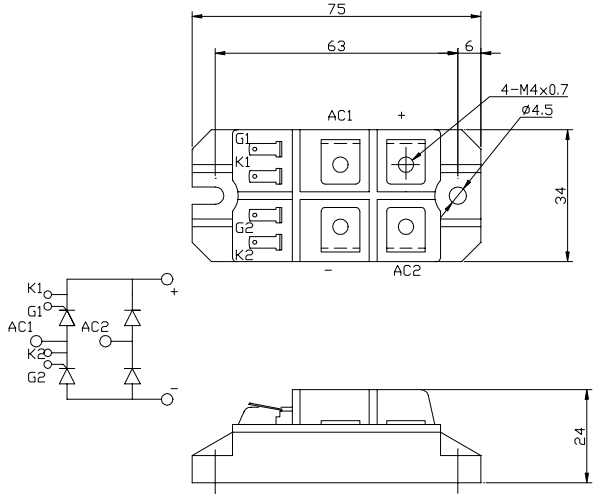
30A / 800V

OUTLINE DRAWING

FEATURES

* Isolated Base
* Thyristors and Diodes H-Bridge Circuit
* High Surge Capability
* UL Recognized, File No. E187184

TYPICAL APPLICATIONS

* Rectified For General Use

Maximum Ratings

Approx Net Weight:70g

Parameter	Symbol	Grade PBH308AC	Unit
Repetitive Peak Off-State Voltage	V_{DRM}	800	V
Non Repetitive Peak Off-State Voltage	V_{DSM}	960	
Repetitive Peak Reverse Voltage	V_{RRM}	800	V
Non Repetitive Peak Reverse Voltage	V_{RSM}	960	

Parameter		Conditions		Max Rated Value	Unit
Average Rectified Output Current	$I_{O(AV)}$	50Hz Half Sine Wave condition Tc=94℃		30	A
Surge On-State Current	I_{TSM}	50 Hz Half Sine Wave,1Pulse, Non-Repetitive		600	A
I Squared t	I^2t	2msec to 10msec		1800	A^2s
Critical Rate of Turned-On Current	di/dt	V_D=2/3V_{DRM}, I_{TM}=2·I_O, Tj=125℃ I_G=200mA, di_G/dt=0.2A/µs		100	A/µs
Peak Gate Power	P_{GM}			5	W
Average Gate Power	$P_{G(AV)}$			1	W
Peak Gate Current	I_{GM}			2	A
Peak Gate Voltage	V_{GM}			10	V
Peak Gate Reverse Voltage	V_{RGM}			5	V
Operating JunctionTemperature Range	Tjw			-40 to +125	℃
Storage Temperature Range	Tstg			-40 to +125	℃
Isoration Voltage	Viso	Base Plate to Terminals, AC1min		2500	V
Mounting torque — Case mounting	Ftor	Greased	M4 Screw	0.9 to 1.6	N•m
Mounting torque — Terminals	Ftor	-	M4 Screw	1.3 to 1.9	N•m
Gate Terminals Treatment Force	Ftor	Insertion/Pulling out		45/32	N

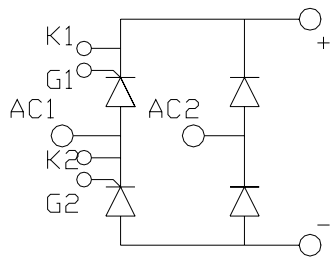
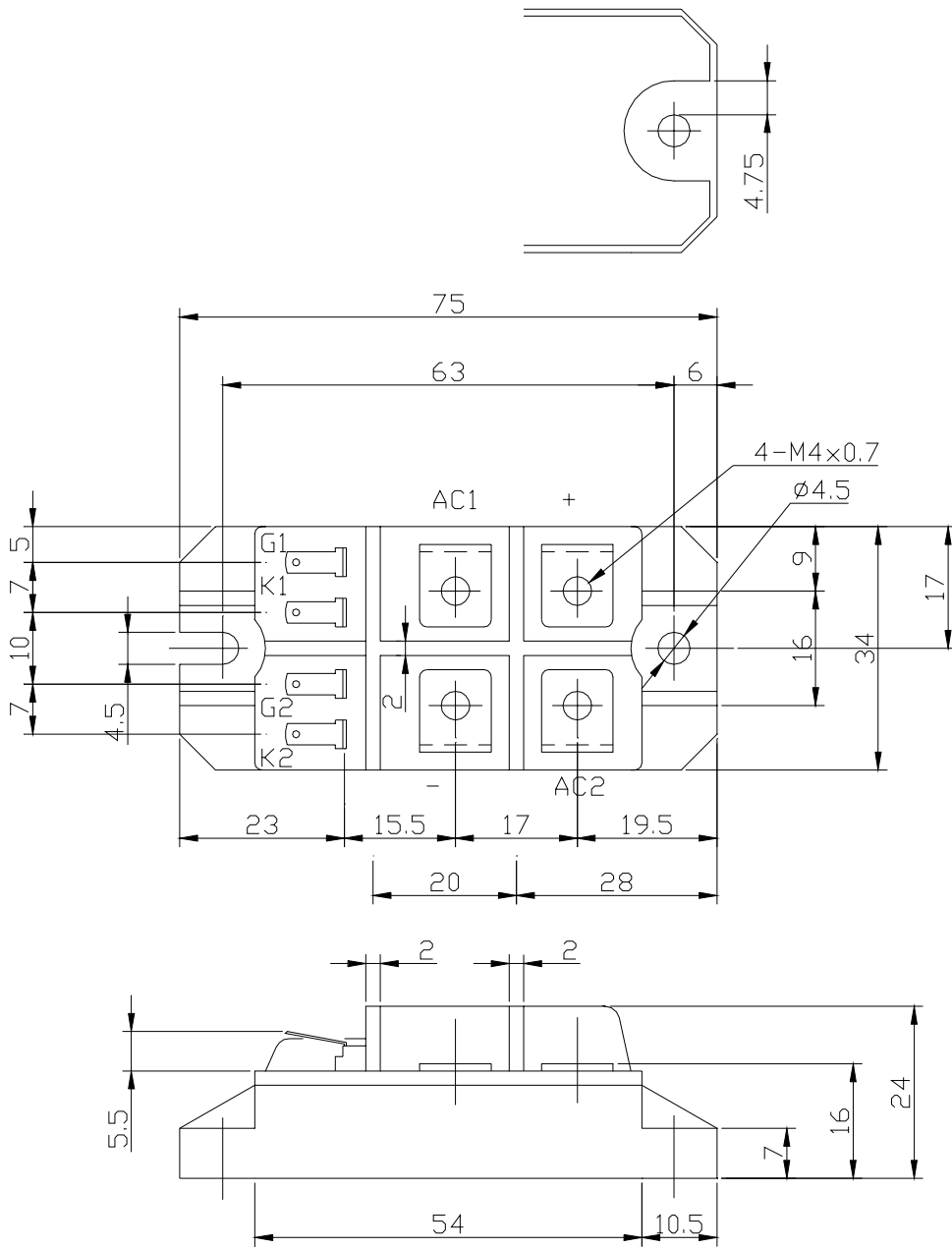
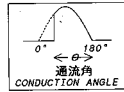
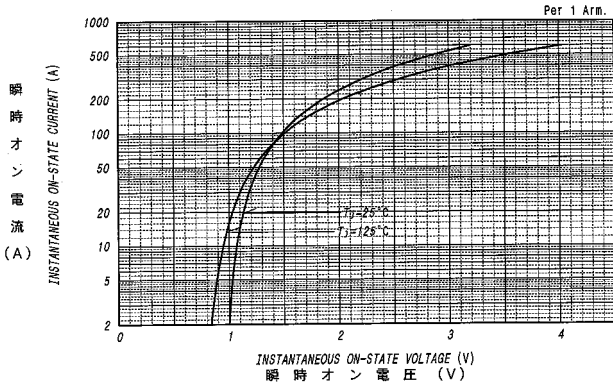
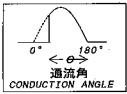
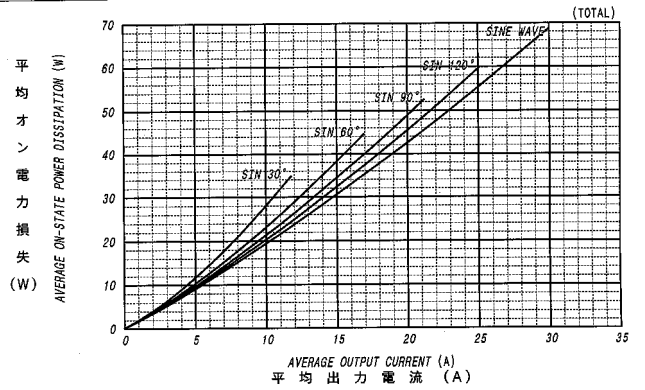
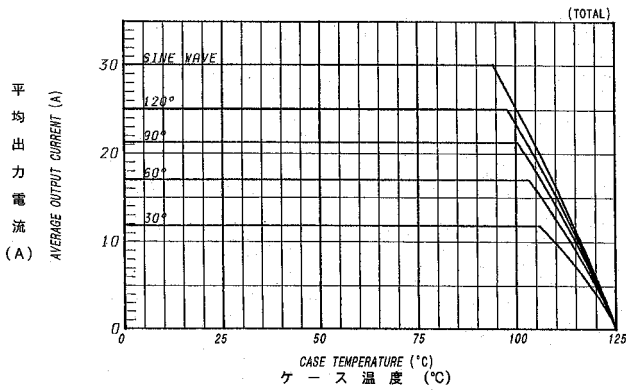
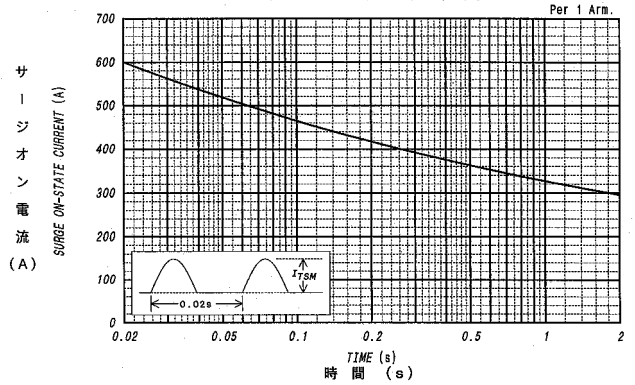
Value per 1 Arm

Electrical • Thermal Characteristics

Characteristics	Symbol	Test Conditions		Min.	Typ.	Max.	Unit
				Maximum Value.			
Peak Off-State Current	I_{DM}	V_{DM}= $V_{DRM,}$ Tj= 125℃				10	mA
Peak Reverse Current	I_{RM}	V_{RM}= $V_{RRM,}$ Tj= 125℃				10	mA
Peak Forward Voltage	V_{TM}	I_{TM}= 90A, Tj=25℃				1.45	V
Gate Current to Trigger	I_{GT}	V_D=6V,I_T=1A	Tj=-40℃			200	mA
			Tj=25℃			100	
			Tj=125℃			50	
Gate Voltage to Trigger	V_{GT}	V_D=6V,I_T=1A	Tj=-40℃			4	V
			Tj=25℃			2.5	
			Tj=125℃			2	
Gate Non-Trigger Voltage	V_{GD}	V_D=2/3V_{DRM} Tj=125℃		0.25			V
Critical Rate of Rise of Off-State Voltage	dv/dt	V_D=2/3V_{DRM} Tj=125℃		500			V/μs
Turn-Off Time	tq	I_{TM}=I_O,V_D=2/3V_{DRM} dv/dt=20V/μs, V_R=100V -di/dt=20A/μs, Tj=125℃			100		μs
Turn-On Time	tgt	V_D=2/3V_{DRM} Tj=125℃ I_G=200mA, di_G/dt=0.2A/μs			6		μs
Delay Time	td				2		μs
Rise Time	tr				4		μs
Latching Current	I_L	Tj=25℃			100		mA
Holding Current	I_H	Tj=25℃			50		
Thermal Resistance *1	Rth(j-c)	Junction to Case				0.44	℃/W
	Rth(c-f)	Base Plate to Heat Sink with Thermal Compound				0.1	

Value Per 1Arm

*1:Value Per Module

PBH308AC OUTLINE DRAWING (Dimensions in mm)

オン電圧特性
ON-STATE CURRENT VS. VOLTAGE
Per 1 Arm.
瞬時オン電流 (A)
INSTANTANEOUS ON-STATE CURRENT (A)
Tj=25°C
Tj=125°C
INSTANTANEOUS ON-STATE VOLTAGE (V)
瞬時オン電圧 (V)
通流角
CONDUCTION ANGLE
平均オン電力損失特性
AVERAGE ON-STATE POWER DISSIPATION
(TOTAL)
平均オン電力損失 (W)
AVERAGE ON-STATE POWER DISSIPATION (W)
SINE WAVE
SIN 120°
SIN 90°
SIN 60°
SIN 30°
AVERAGE OUTPUT CURRENT (A)
平均出力電流 (A)
平均出力電流ーケース温度定格
AVERAGE OUTPUT CURRENT VS. CASE TEMPERATURE
(TOTAL)
平均出力電流 (A)
AVERAGE OUTPUT CURRENT (A)
SINE WAVE
120°
90°
60°
30°
CASE TEMPERATURE (°C)
ケース温度 (°C)
サージオン電流定格
SURGE CURRENT RATINGS
f=50Hz,Half Sine Wave,Non-Repetitive,Tj=125°C
Per 1 Arm.
サージオン電流 (A)
SURGE ON-STATE CURRENT (A)
ITSM
0.02s
TIME (s)
時間 (s)
ゲート特性
GATE CHARACTERISTCS
トリガゲート電圧 (V)
TRIGGER GATE VOLTAGE (V)
-40 °C
25 °C
125 °C
TRIGGER GATE CURRENT (mA)
トリガゲート電流 (mA)
ゲート定格
GATE RATINGS
ゲート電圧 (V)
GATE VOLTAGE (V)
PGM = 5W
f ≧ 50Hz
duty ≦ 20%
GATE CURRENT (A)
ゲート電流 (A)